

REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested. Claims 1-82 are presently active in this case, Claims 7-35, 42-64 and 70-82 previously withdrawn from consideration, and Claim 1 amended by way of the present amendment.

In the outstanding Official Action, Claim 40 was rejected under 35 U.S.C. § 112, second paragraph; Claim 1, 36-37, and 65-66 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,363,097 B1 to Link et al. in view of U.S. Patent 6,544,626 to Yoon et al.; Claim 38-41 and 67-69 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Link et al. in view of Yoon et al., and further in view of U.S. Patent No. 5,278,851 to Goto; Claims 2-4 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Link et al. and Yoon et al, and further in view of the publication "High Power 1550nm distributed feedback lasers with 440mW CW output power for telecommunication applications" to Menna et al.; and Claims 5-6 were objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claims.

First, Applicants wish to thank the Examiner for the indication of allowable subject matter in Claims 5-6. Applicants wish to maintain Claims 5 and 6 in dependent form, however, because Applicants believe that amended Claim 1, from which Claims 5 and 6 depend, patentably defines over the cited references.

Applicants would also like to thanks Examiner Mondt for the December 19, 2003 personal interview, at which time the outstanding issues in this case were discussed. During the discussion, Applicants presented amendments and arguments substantially as indicated in this response. While no formal agreement was reached, Examiner Mondt indicated that the

amendments contained herein appear to overcome the prior art of record, but further search and consideration would be needed.

With regard to the request for the reference filed with the Information Disclosure Statement on June 22, 2001, filed herewith is a copy of such reference.

With regard to the rejection under 35 U.S.C. § 112, second paragraph, Claim 40 has been amended to correct the noted informality. Therefore, the rejection under 35 U.S.C. § 112, second paragraph is believed to be overcome and no further rejection on that basis is anticipated. If, however, the Examiner disagrees, the Examiner is invited to telephone the undersigned who will be happy to work with the Examiner to provide mutually satisfactory claim language.

Turning now to the merits, Applicants invention is directed to a semiconductor laser device for emitting a plurality of longitudinal modes. As discussed in the Background section of Applicants specification, prior art multiple mode lasers included an external Fiber Bragg Grating (FBG) for providing multiple mode oscillation. However, such external grating devices suffered from a variety of problems such as relative intensity noise (RIN) and mechanical assembly problems. As discussed in the December 19, 2003 interview, while integrated grating lasers have been known, such lasers are single mode lasers. Applicants have discovered a way to reduce the problems with prior art multiple mode lasers by providing multiple mode operation with an integrated diffraction grating device.

In order to expedite issuance of a patent in this case, Applicants have amended independent Claim 1 to clarify the patentable distinctions of the present invention over the cited references. Specifically, Applicants Claim 1 as amended recites a semiconductor laser device including an active layer configured to radiate light and a diffraction grating position within the semiconductor laser device. Also recited is that the semiconductor laser device is configured to emit a light beam, the light beam having a plurality of longitudinal modes in a

predetermined spectral width of a oscillation wavelength spectrum of the semiconductor laser device. Thus, as discussed in the December 19, 2003 interview, Claim 1 has been amended to clarify that the diffraction grating is an integrated grating that is positioned within the semiconductor laser device itself. Moreover, this claim has been amended to clarify that the phrase “having a plurality of longitudinal modes . . .” modifies “light beam” rather than “laser device.” With regard to independent Claim 36, Applicants note this claim is not amended because it is clear from the original claim that the diffraction grating is provided within the semiconductor laser device and the plurality of longitudinal modes occur in the light beam specifically, rather than the semiconductor laser device generally.

In contrast, the cited reference to Link et al. discloses a semiconductor laser with a rewritable wavelength stabilizer that includes a laser mirror made of a grating written into a photorefractive material, in which the oscillation wavelength of a laser diode is determined by the period of grating. As stated at column 1, lines 11-21, the laser of Link et al. is a single longitudinal mode laser. Thus, Link et al. does not disclose the limitation of the laser device being configured to emit a light beam, the light beam having a plurality of longitudinal modes within a predetermined spectral width of an oscillation wavelength spectrum of the semiconductor laser device.

With regard to the cited references to Goto et al. and Yoon et al., these references do not disclose an integrated diffraction grating device. Specifically, Yoon et al. discloses a Fabry-Perot laser that provides a light output having multiple longitudinal modes. However, this multiple mode output results from Fabry-Perot oscillations and not from a diffraction grating. While Goto et al. discloses a feedback mechanism for providing multiple longitudinal modes of operation, Goto et al. discloses an external resonator that provides for selection of the multiple longitudinal modes, similar to the prior art discussed above. Thus,

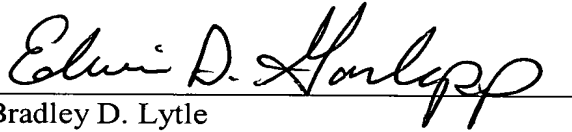
neither Goto et al. nor Yoon et al. disclose a diffraction grating positioned within the semiconductor laser device as now clearly recited in Applicants independent Claim 1 and 36.

Thus, Applicants' Claims 1 and 36 patentable define over the cited references. Moreover, as Claims 2-35 and 37-64 depend from Claims 1 and 36 respectively, these claims also patentable define over the cited references.

Consequently, in view of the present amendment, no further issues are believed to be outstanding in the present application and the present application is believed to be in condition for formal allowance. An early and favorable action is therefore respectfully requested.

Respectfully submitted,

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